OPERATING SUMMARY

PARRY SOUND

1972

Ontario

Ministry of the
Environment

135 St. Clair Avenue West
Toronto 195, Ontario

We are pleased to present you with the 1972 operating summary for the water pollution control plant serving your community.

This summary contains data on the performance of the plant as well as relevant financial information. Of particular interest is the review of the year's activities in which significant items of these data are discussed in some detail by the operations engineer and his staff who, by their day-to-day involvement with the operation, are thoroughly familiar with the plant.

We appreciate your continuing interest in protecting the environment through the efficient operation of this wastewater treatment facility.

D.S. Caverly,
Assistant Deputy Minister.

D.A. McTavish, P. Eng.,
Director,
Project Operations Branch.

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable James A.C. Auld

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
D.S. Caverly

EXECUTIVE DIRECTOR
K.H. Sharpe

PROJECT OPERATIONS BRANCH

DIRECTOR
D.A. McTavish

ASSISTANT DIRECTOR
C.W. Perry

REGIONAL SUPERVISOR
P.J. Osmond

OPERATIONS ENGINEER
J. Wesno

135 St. Clair Avenue West
Toronto 195

PARRY SOUND

WATER POLLUTION CONTROL PLANT

operated for

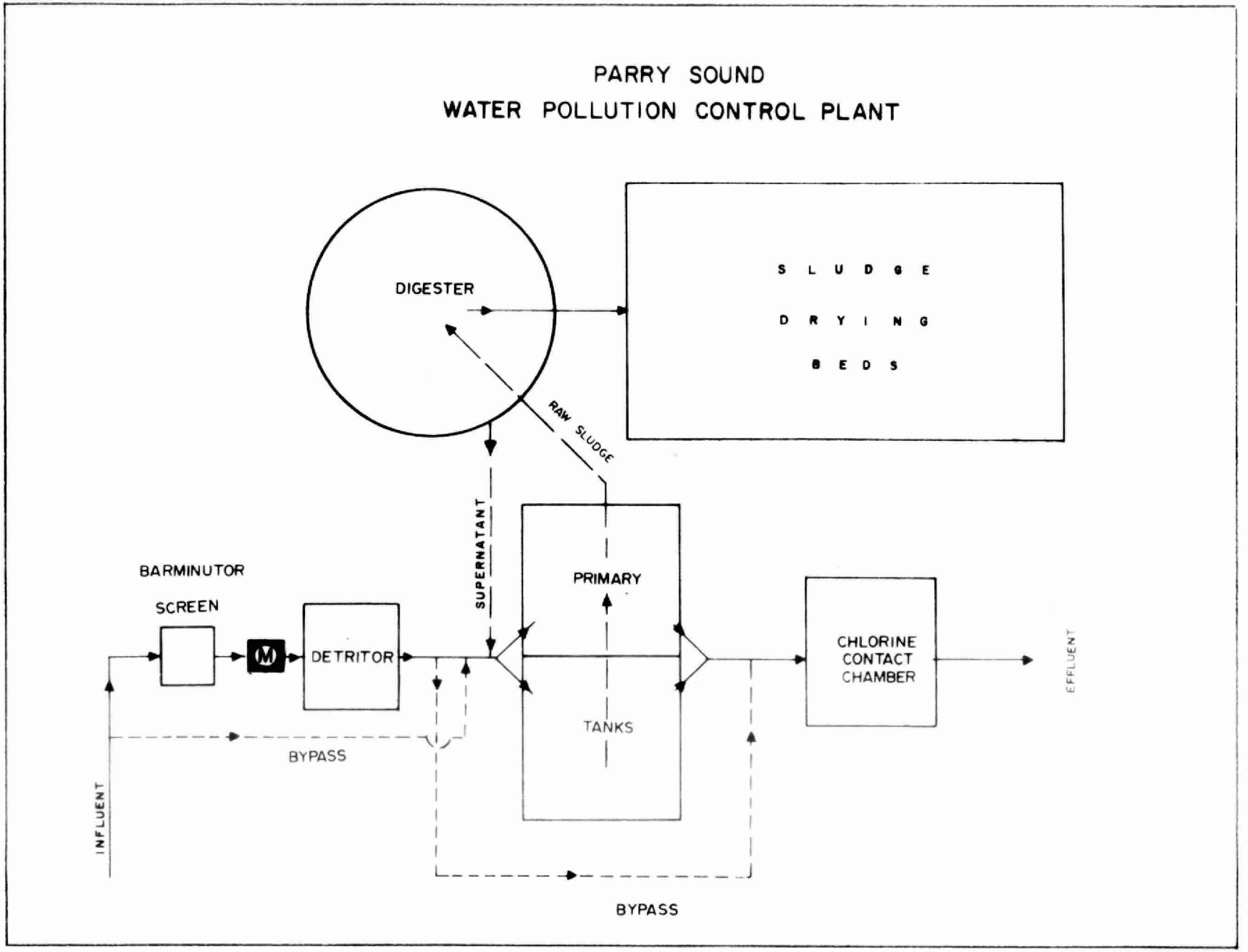
THE TOWN OF PARRY SOUND

by the

MINISTRY OF THE ENVIRONMENT

1972 ANNUAL OPERATING SUMMARY

CONTENTS


PARRY SOUND
WATER POLLUTION CONTROL PLANT
DIGESTER
SLUDGE
DRYING
BEDS
RAW SLUDGE
SUPERNATANT
PRIMARY
TANKS
BARMINUTOR
SCREEN
DETRITOR
CHLORINE
CONTACT
CHAMBER
EFFLUENT
INFLUENT
BYPASS
BYPASS

DESIGN DATA

PROJECT NO.	2-0113-62
TREATMENT	Primary
DESIGN FLOW	0.83 mgd
DESIGN POPULATION	7,500
BOD - Raw Sewage	250 mg/l
- Removal	35%
SS - Raw Sewage	200 mg/l
- Removal	35%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C (18")

Grit Removal

Type: Dorr Detritor
Size: One 10 X 10 X $1\frac{1}{4}$'
Retention: 1.35 min

Primary Sedimentation

Type: Dorr
Size: Two 30' x 30' x 10' swd
(112,000 gallons)
Retention: 3.24 hr
Loading: Surface, 460 gal/ft^2/day
Weir, 3700 gal/ft/day

CHLORINATION

Type: W & T, Type A-731
Size: One 200 lb/day

Chlorine Contact Chamber

Size: One $25\frac{1}{2}$ X $8\frac{1}{2}$ X 8'
(11,150 gal)
Retention: 19.2 min

OUTFALL

- to McCurry Lake

SLUDGE HANDLING

Digestion System - single-stage

Type: Dorr draft tubes (2)
Size: One 35' dia x 20' 9" swd
(20,580 cu ft or 138,000 gal)
Loading: 0.85 lb/cu ft/mo

Drying Beds

- Four $76\frac{1}{2}$ X 29'

PUMPING STATIONS

#2 Ejector Station

Type: Smith & Loveless
Size: One 100 gpm @ 135' tdh

#1 Pumping Station

Type: Flygt
Size: Two 40 gpm @ 26' tdh

#7 Pumping Station (Bay St.)

Type: Flygt
Size: One 40 gpm @ 35' tdh

#3 Pumping Station (Hawthorn Cr.)

Type: Flygt
Size: One 50 gpm

#4 Pumping Station (William St.)

Type: Flygt
Size: Two 250 gpm @ 36' tdh

#5 Pumping Station (Cascade St.)

Type: Robert Morse (Weinman)
Size: Two 420 gpm @ 41' tdh

#6 Pumping Station

Type: Robert Morse
Size: Two 860 gpm @ 150' tdh

'72 Review

GENERAL

The project consists of a 0.83 mgd primary treatment plant and nine sewage lift stations, two of which are operated for the Town under an operating agreement. The project is staffed by a chief operator and an operator.

The plant effluent is discharged to Georgian Bay, via McCurry Lake and McCurry Creek. During the spring, for a period of two or three weeks after the ice has gone off the lake, strong odours are noted in the proximity of the lake and creek. Intermittent odours noted at other times, are not as strong however. A design report to extend and expand the plant to a 1.3 mgd secondary activated sludge plant, and to upgrade pumping stations No. 2 and No. 6 was received and reviewed in 1971.

EXPENDITURES

The operating cost for the complete project for the year was $43,710.51. The cost per million gallons of sewage treated was $190.29. This compared to $155.00 in 1971, $157.20 in 1970, and $126.66 in 1969.

PLANT FLOWS AND CHLORINATION

The average daily flow for the year was 630,000 gallons, a reduction of approximately 15.7 percent from the previous year. The average daily design flow of 830,000 gallons was exceeded 16 percent of the time. A total of 21,800 pounds of chlorine was used during the year, representing an average chlorine dosage of 9.7 mg/l.

PLANT EFFICIENCY

The raw sewage BOD and suspended solids concentration averages were 133 mg/l and 267 mg/l respectively. This represented an increase of approximately 2 percent in BOD and 44 percent in suspended solids over the previous year. The final effluent BOD and suspended solids averages were 46 mg/l and 35 mg/l respectively. The BOD removal increased from 51 percent in 1971 to 63 percent in 1972, and the suspended solids removal from 31 percent in 1971 to 87 percent in 1972.

SLUDGE DIGESTION AND DISPOSAL

A total of 325, 000 gallons of raw sludge was pumped to the digester and 109, 000 gallons of digested sludge removed from the digester to the drying beds. A total of 160 cubic yards of dried sludge was removed from the beds.

The average total solids concentration of the raw sludge was 5.1 percent and the volatile matter concentration, 57 percent. The digested sludge pumped to the drying beds had an average total solids concentration of 8.4 percent of which 39 percent was volatile matter.

CONCLUSIONS

The plant produced a good quality primary effluent in 1972. Odours were still prevalent from time to time and will not be eradicated until a plant expansion is implemented. No action was taken on a plant expansion in 1972 because of the reluctance of the municiplaity to take on further financial responsibility.

PROJECT COSTS

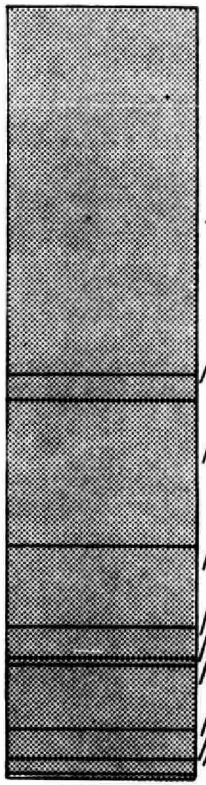
NET CAPITAL COST	$839,970.73
DEDUCT - Portion financed by CMHC	(549,696.21)
Long Term Debt to MOE	$290,274.52
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1972	$ 49,183.19
Net Operating	$ 43,710.51
Debt Retirement	3,427.00
Reserve	3,552.62
Interest Charged	16,277.75
TOTAL	$ 66,967.88

RESERVE ACCOUNT

Balance @ January 1, 1972	$ 31,002.01
Deposited by Municipality	3,552.62
Interest Earned	1,953.27
	$ 36,507.90
Less Expenditures	3,800.00
Balance @ December 31, 1972	$ 32,707.90

1972 COSTS

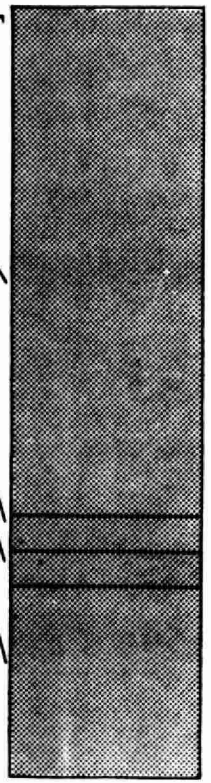
OPERATING COSTS



PAYROLL	47 %
FUEL	3 %
POWER	19 %
CHEMICALS	11 %
GENERAL SUPPLIES	4 %
EQUIPMENT	1 %
REPAIRS & MAINTENANCE	9 %
SUNDRY	2 %
WATER	4 %
TRAVEL	<1 %

TOTAL ANNUAL COST

NET OPERATING	65 %
DEBT RETIREMENT	5 %
RESERVE	5 %
INTEREST	25 %



YEARLY OPERATING COSTS

YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	TREATMENT COSTS	
			$ per million gal	¢ per lb BOD
1968	198.76	32,277.42	162.39	28 cents
1969	260.7	33,021.33	126.66	29 cents
1970	240.90	37.883.25	157.20	21 cents
1971	254.	39,360.14	155.00	21 cents
1972	229.0	43,710.51	190.30	24 cents

MONTHLY OPERATING COSTS

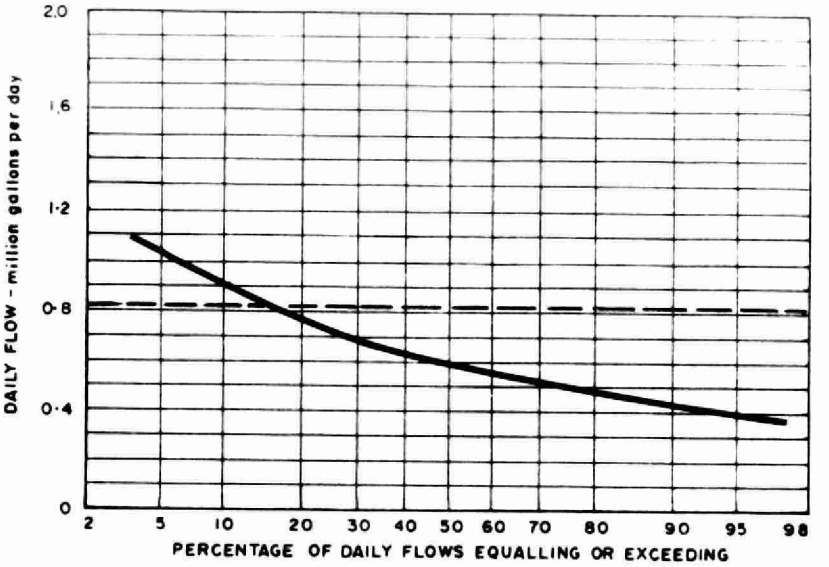
MONTH	TOTAL EXPENDITURE	REGULAR PAYROLL	CASUAL PAYROLL	FUEL	POWER	CHEMICALS	GENERAL SUPPLIES	EQUIPMENT	REPAIRS and MAINTENANCE	SUNDRY*	WATER	TRAVEL
JAN	1785.61	1449.38			150.68		24.42			39.15	121.98	
FEB	3687.12	1434.42		295.54	679.86	568.50	120.75		391.55	37.11	159.39	
MAR	2671.40	1404.81		295.58	649.96		99.74		36.00	49.37	135.94	
APR	2517.92	1474.52			600.62		180.05	94.48		28.81	139.44	
MAY	3651.20	1644.74		295.50	649.78	568.50	275.94			12.60	146.09	58.05
JUNE	3826.34	2055.16			815.76	435.00	125.20		238.83	12.40	143.99	
JULY	2273.78	47.62			662.66	389.81	116.69	205.75	680.69	26.57	143.99	
AUG	3603.71	1437.22	337.03	295.50	636.11	420.00	139.97	205.75		(2.06)	134.19	
SEPT	3455.92	1440.12	426.79		536.64	420.00	191.77		416.53	14.31	9.76	
OCT	3528.84	1880.53	123.66		836.54		86.41		271.29	15.36	315.05	
NOV	1520.92	77.55			657.71		101.59			514.88	169.19	
DEC	11187.75	5447.98		295.50	1220.13	1813.88	370.65	(205.75)	2004.37	36.58	204.41	
TOTAL	43710.51	19794.05	887.48	1477.62	8096.45	4615.69	1833.18	300.23	4039.26	785.08	1823.42	58.05

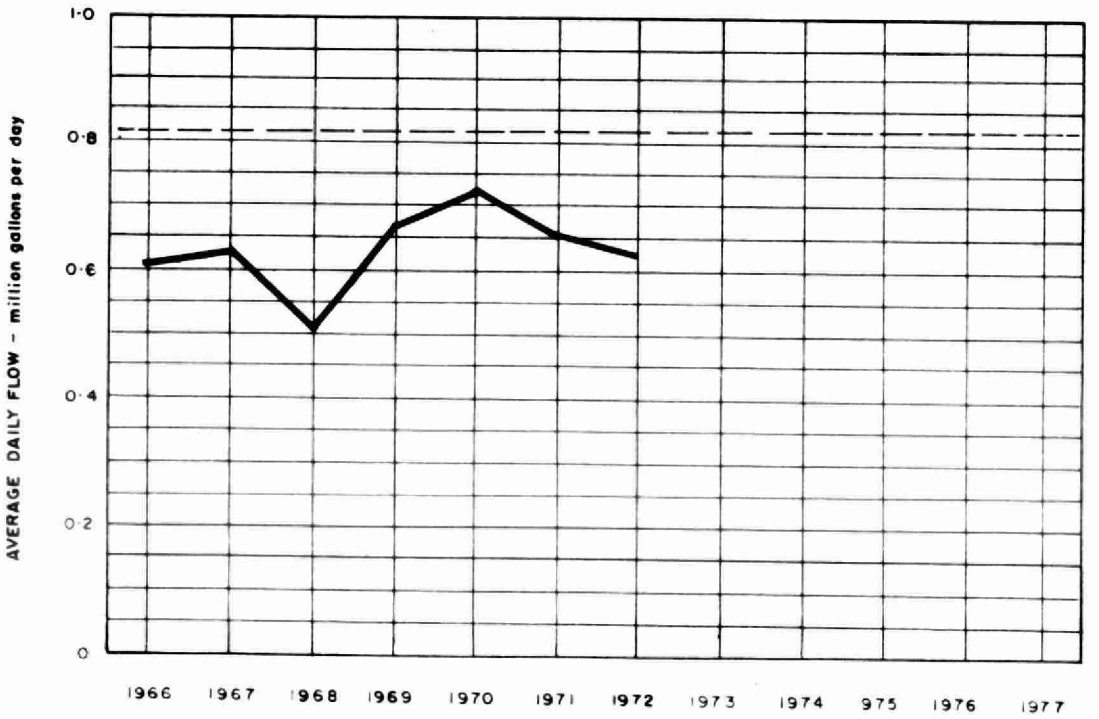
Brackets indicate credit.

* Sundry includes sludge haulage costs of

PROCESS DATA

FLOWS



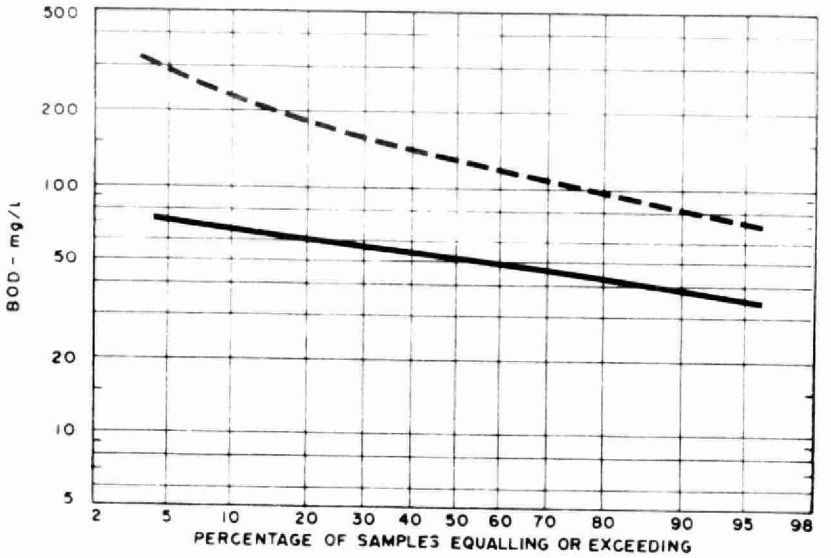


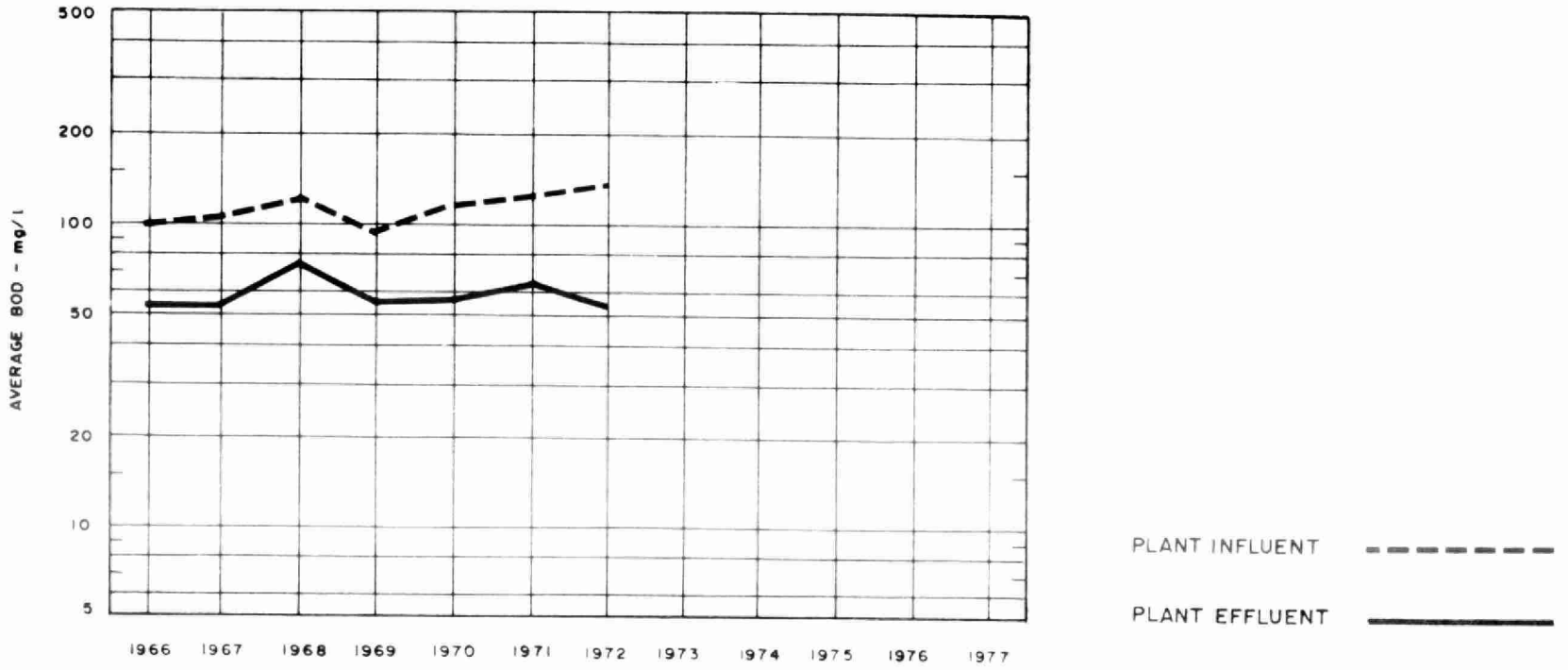
DESIGN CAPACITY _ _ _ _ _ _ _

PLANT PERFORMANCE

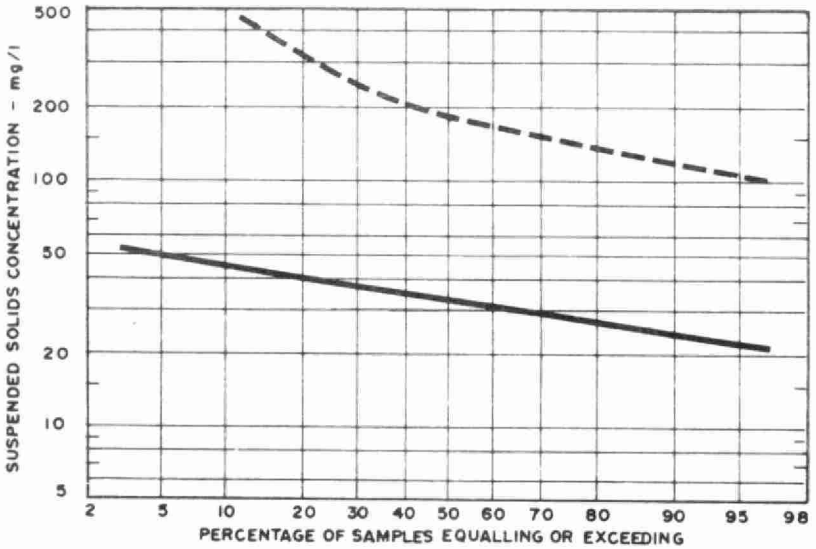
MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10^3 pounds	mg/l	mg/l	%	10^3 pounds	mg/l P	mg/l P
JAN	19.4	.62	1.11	125	59	53	12.8	133	25	81	20.9	8.2	3.6
FEB	12.7	.44	.58	120	60	50	7.6	120	30	75	11.4	9.8	4.3
MAR	17.1	.55	1.25	160	60	63	17.1	165	45	73	20.5	11.0	6.0
APR	34.1	1.14	1.87	80	55	31	8.5	170	40	76	44.3	9.0	3.6
MAY	19.5	.63	1.14	83	48	42	6.8	277	33	88	48.0	8.1	4.0
JUNE	19.0	.63	1.09	130	60	53	13.3	440	100	77	64.5	9.8	4.4
JULY	20.2	.65	1.10	240	40	83	40.5	160	30	81	26.3	7.7	3.4
AUG	19.0	.61	.93	125	44	65	15.4	505	30	94	90.3	11.7	3.7
SEPT	14.1	.47	.69	170	54	68	16.3	280	20	93	36.6	11.0	5.1
OCT	15.6	.50	.87	115	60	48	8.6	225	25	89	31.1	8.0	4.8
NOV	19.0	.63	.90	140	31	78	20.7	275	25	91	47.6	7.8	3.1
DEC	20.0	.65	1.43	120	42	65	12.6	320	20	94	60.1	11.0	3.8
TOTAL	229.7	-	-	-	-	-	180.2	-	-	-	501.6	-	-
AVG.	-	.63	MAXIMUM 1.87	133	46	63	15.0	267	35	87	41.8	9.2	4.1
No. of Samples	-	-	-	22	22	-	-	22	22	-	-	22	22

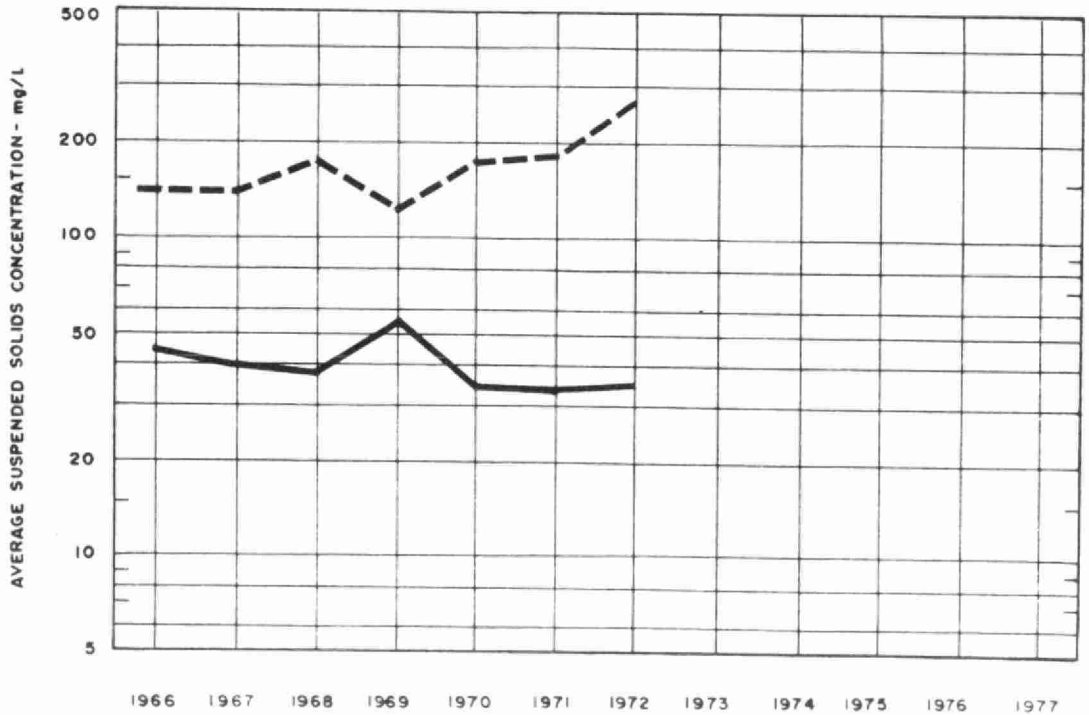
BIOCHEMICAL OXYGEN DEMAND





SUSPENDED SOLIDS

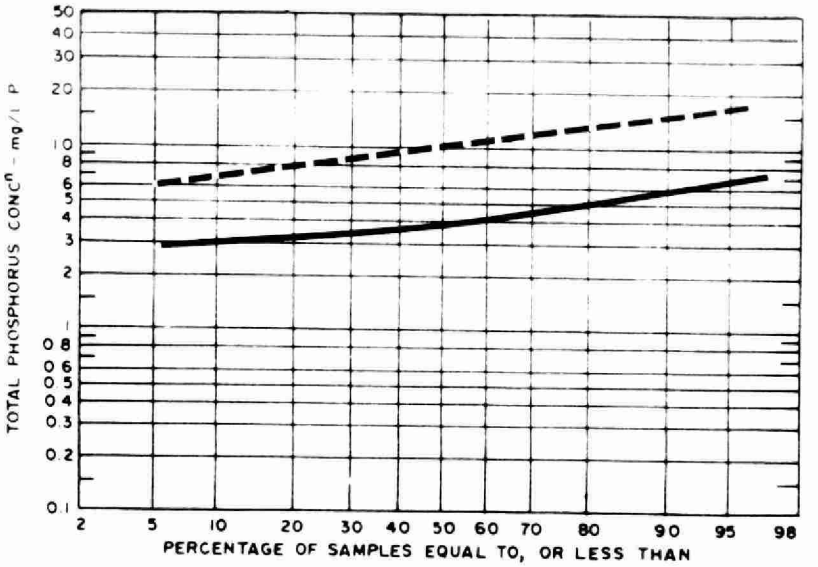


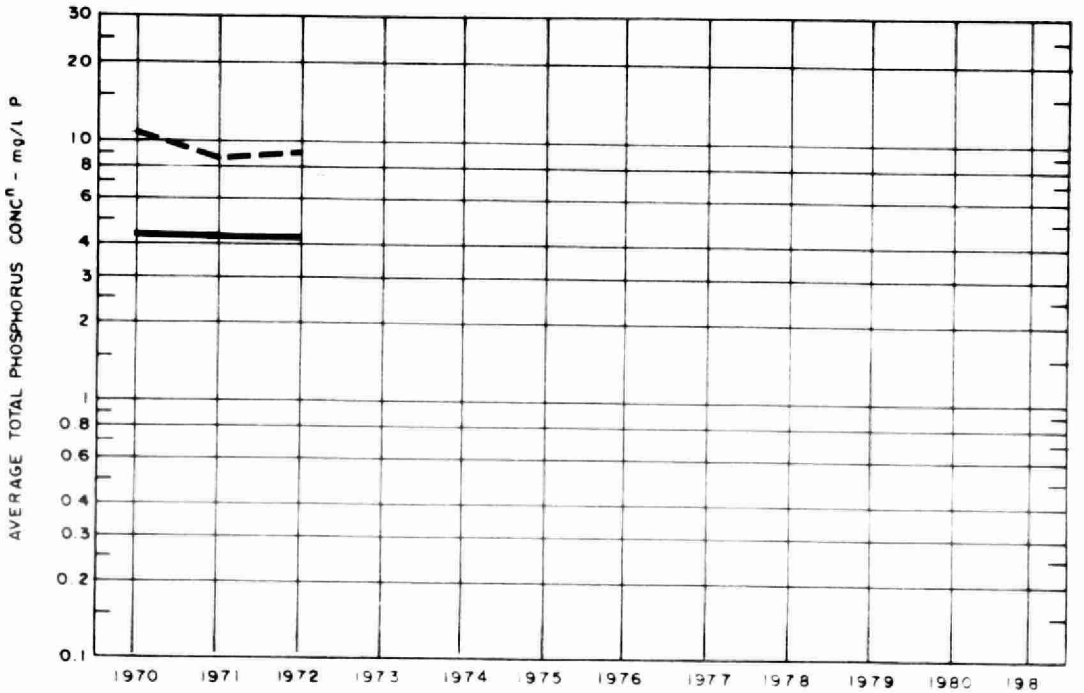


PLANT INFLUENT

PLANT EFFLUENT

PHOSPHORUS

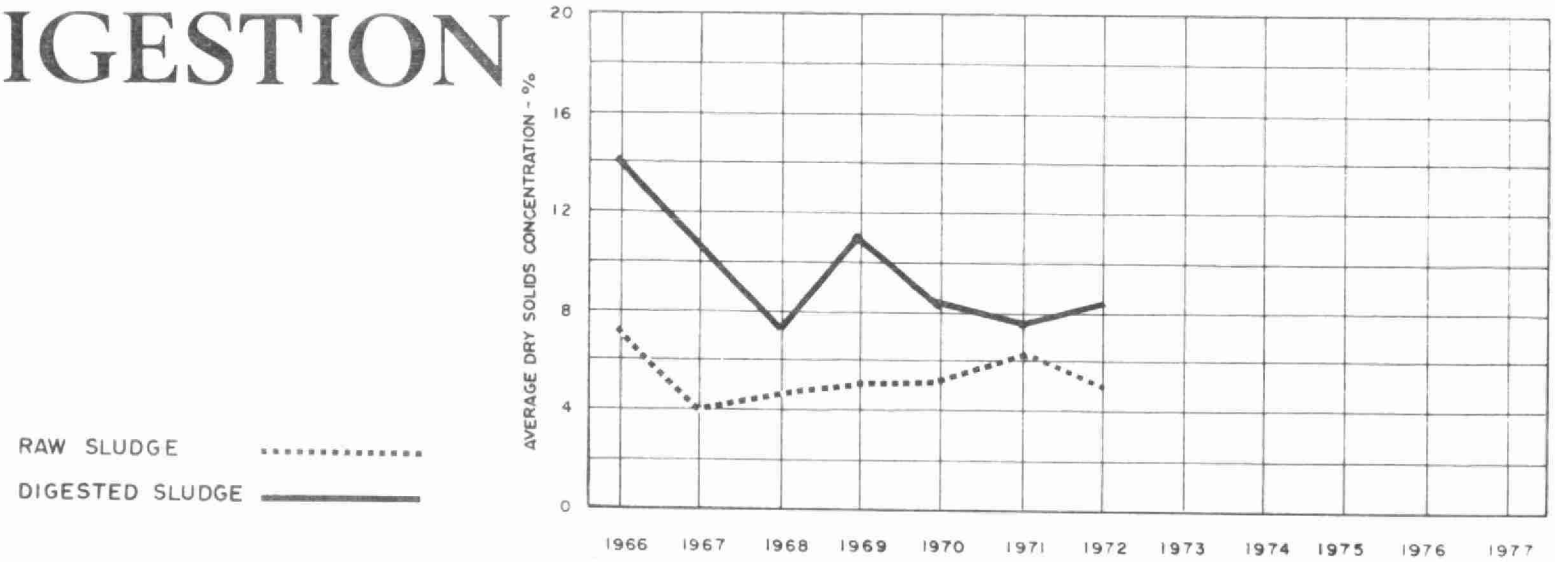


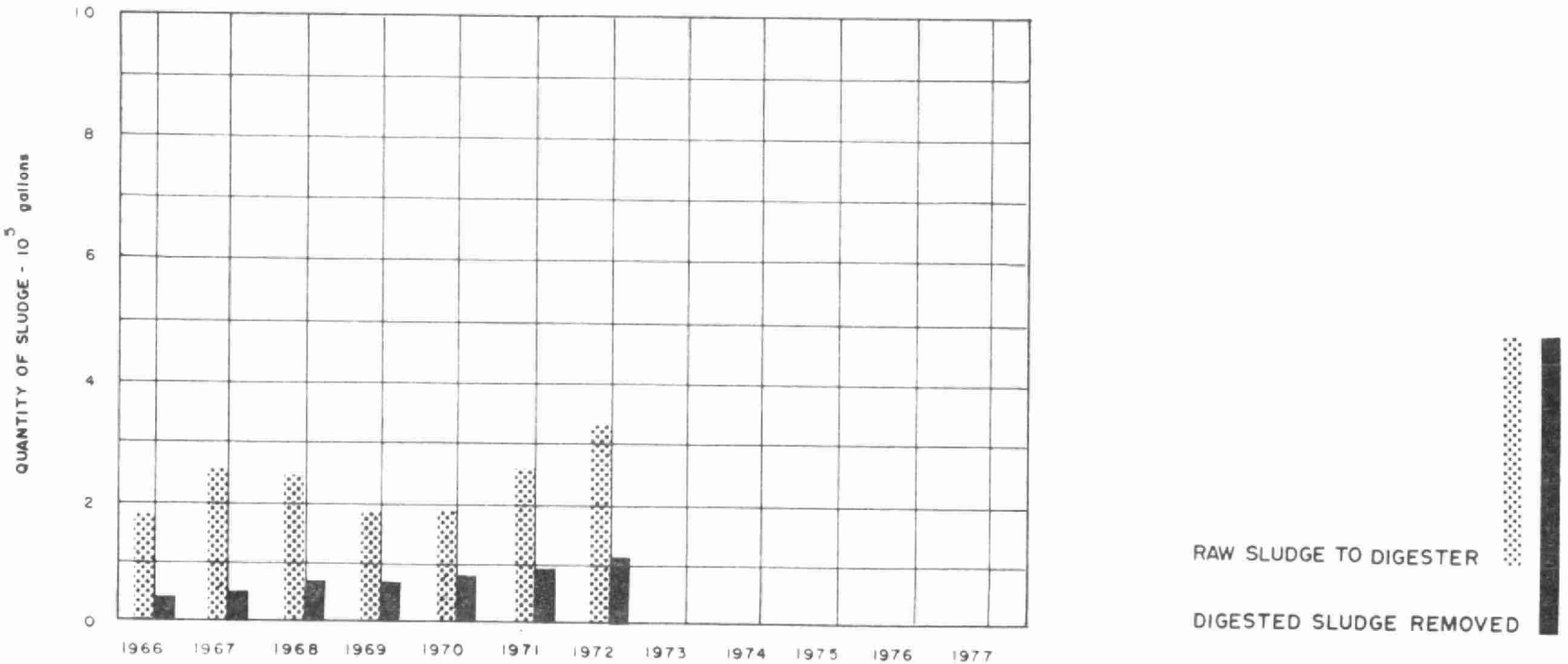


PLANT INFLUENT

PLANT EFFLUENT

DIGESTION


AVERAGE DRY SOLIDS CONCENTRATION - %
0
4
8
12
16
20
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
RAW SLUDGE
DIGESTED SLUDGE


QUANTITY OF SLUDGE - 10^5 gallons
0
2
4
6
8
10
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
RAW SLUDGE TO DIGESTER
DIGESTED SLUDGE REMOVED

TREATMENT DATA

MONTH	GRIT	CHLORINATION		SLUDGE DIGESTION and DISPOSAL							
				RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT	
	QUANTITY REMOVED cubic feet	CHLORINE USED 10^3 pounds	AVERAGE DOSAGE mg/l	QUANTITY 10^3 gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	QUANTITY REMOVED 10^3 gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	TOTAL SOLIDS %	SLUDGE * HAULED cubic yards
JAN	61	2.0	10.6	27	3.4	64	10.	3.5	50	.3	0
FEB	11	1.9	14.9	25	4.8	60	3.	5.9	49	-	0
MAR	40	1.8	10.3	28	8.8	50	4.	7.6	42	-	0
APR	330	2.0	5.7	29	4.3	78	5.	9.3	42	.2	10
MAY	49	1.9	9.7	28	5.3	54	15.	7.3	38	.5	39
JUNE	111	1.6	8.6	27	3.1	56	10.	7.5	45	.3	39
JULY	148	1.7	8.3	27	5.2	54	5.	11.9	36	1.6	14
AUG	99	1.8	9.3	27	4.7	59	11.	11.1	28	.3	12
SEPT	94	1.7	12.0	26	7.7	45	12.	9.1	29	.3	40
OCT	87	1.7	11.1	27	5.3	58	17.	8.7	38	.4	6
NOV	52	1.8	9.6	27	4.6	50	12.	9.8	38	.3	0
DEC	100	1.9	9.5	27	4.4	58	5.	9.5	41	.4	0
TOTAL	1182	21.8	–	325	–	–	109.	–	–	–	160
AVG	5.2 cubic feet/mil gal	1.8	9.5	27	5.1	57	9.	8.4	39	.5	13.3

* From drying beds